

FOOD FOR THOUGHT:

A research-led approach to improved Welsh food industry competitiveness

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PROBLEM

Big corporations use costly tools and testing methods for new products, however this is financially out of reach for Small-Medium Enterprises (SMEs).



GOAL

Help Welsh food SMEs increase sales by improving packaging designs.



Research

Develop guidelines for the Perceptual Experience Laboratory (PEL) as a low-cost synthetic reality user-testing environment for the purposes of testing packaging designs.

WHAT IS PEL?

The Perceptual Experience Lab is a synthetic reality space that replicates real environments with controlled and monitored conditions. The sense of immersion can be manipulated with surround sound, light and temperature control, air flow, smell diffusion, and the capacity for physical props.



WHY USE PEL?

- Flexibility
- Low cost
- High levels of control
- Easy to set up
- Customisable data collection
- Ensures privacy and confidentiality

ENVIRONMENTAL SETUP: SENSORY INPUT TEST

The optimum sensory input for user testing was determined. Participants enjoyed the condition where all their senses were stimulated, and judged it to be a more immersive and believable experience of a supermarket environment than conditions that stimulated less senses.



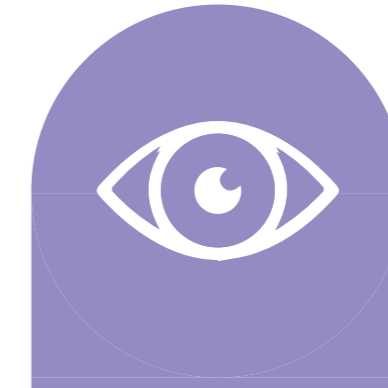
Sound of supermarket background noises



Smell of freshly baked bread



Feel and weight of holding a shopping basket



Wrap around screen, covering full field of vision

NEXT EXPERIMENT ENVIRONMENTAL SETUP: VISUAL BELIEVABILITY TEST

The next Environmental Setup experiment will compare 4 different images to establish which is the most believable



Linear Perspective Photograph of Supermarket Shelving

Photographs of shelves look most realistic, but it is difficult to attain photographing permission on a regular basis



Fovographised* Photograph of Supermarket Shelving



Linear Perspective CAD Rendering of Supermarket Shelf

Computer Aided Design (CAD) shelves are customisable and offer complete control of scene but look less realistic



Fovographised* CAD Rendering of Supermarket Shelving

* FOVOGRAPHY is a method of capturing the full field of vision, resulting in images that appear to have much more breadth and depth than conventional images

FOVOGRAPH

